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AUTHOR Smith, Sheila; Freedman, Daniel G.
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ABSTRACT

A study was conducted to compare experiential features of mother/toddler interaction and maternal perception of toddler temperament in two ethnic groups: Chinese-Americans and European-Americans. Subjects were 16 mother/toddler dyads with five girls and three boys in each group matched for sex, age, and birth order. Caucasian mothers were native-born Americans of European background with high school educations; their husbands worked in nonprofessional occupations. Chinese mothers were of Cantonese background with an average of 7 years residence in the United States and 10 years of schooling; none was fluent in English and all spoke Cantonese in the home. A teaching/learning task and a free-play session were videotaped in the subjects' homes. Toddler temperament questionnaires were completed by mothers after the home visit. In general, findings suggest that during toddlerhood the Caucasian mother/child system affords children considerably more experience as self-assertive agents than does the Chinese system. Chinese toddlers' experience during interactions can be described as comparatively passive. However, Chinese mothers seem to perceive their toddlers as relatively noncompliant and appear to have a greater sensitivity to resistant behavior; their interaction styles impose considerable limitations on child autonomy. Despite Chinese mothers' tendency to assess their toddlers as less adaptable, most of these mothers gave their toddlers global ratings of "easier than average." (RH)

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MOTHER-TODDLER INTERACTION AND MATERNAL PERCEPTION OF CHILD TEMPERAMENT IN TWO ETHNIC GROUPS: CHINESE-AMERICAN AND EUROPEAN-AMERICAN*

Sheila Smith and Daniel G. Freedman

Committee on Human Development

The University of Chicago

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MOTHER-TODDLER INTERACTION AND MATERNAL PERCEPTION OF CHILD TEMPERAMENT IN TWO ETHNIC GROUPS: CHINESE-AMERICAN AND EUROPEAN-AMERICAN

Most cross-cultural research on mother-child interaction has the broad theoretical aim of enriching our conceptualization of "cultural influence" on socialization and development. This goal has been pursued through analyses of such variables as family size and organization (Chisholm 1981), cultural values - often inferred from the interaction itself - (Martini and Kirkpatrick 1981) and population differences in "average" temperament (Freedman 1974). For the most part comparative studies of mother-child interaction afford little developmental perspective on the emergence of socialization patterns since assessments are usually confined to a single age or a few months during infancy. For this reason an important locus of cultural influence has been largely neglected: this is the history of interactions in one period that helps shape subsequent experience.

This view of cultural influence located in emergent experience is simply an application of Bell's (1977) perspective on "child effects" to population differences in socialization. Bell points to the logical appeal of predicting that caretaking practices influencing the development of behavioral style at one age will, by virtue of the child's active structuring of experience, contribute to socialization at a later period. Perhaps the clearest example of such historical influence is the demonstration that low maternal responsiveness to crying in early infancy predicts greater frequency of crying in older infants which may in turn inhibit optimal social interaction during the later period (Bell and Ainsworth 1972;

Beckwith 1971). The more general point concerns the longitudinal course of behaviors in the mother-child system: child propensities shaped at one age contribute to the system both partners create in subsequent periods. Extended to cross cultural work, this view emphasizes the self-generating nature of "cultural influence" in the mother-offspring relationship observed over time.

The study reported here compares experiential features of mother-toddler interaction and maternal perception of toddler temperament in two ethnic groups: Chinese-American and European-American. While this work is limited to a single-age assessment at two years, past comparisons of newborn temperament, styles of mother-infant interaction, and maternal perception of infant temperament provide a developmental reference point. In the context of Caucasian-Asian differences documented during infancy the present study aims to broaden our comparative view of the mother-offspring system in each group. A brief review of infancy research with these groups will clarify the developmental context of our comparisons at age two.

BEHAVIORAL ASSESSMENTS

Freedman and Freedman (1969) tested 24 Chinese- and European-American newborns with a behavioral-neurological scale developed by Brazelton and Freedman (1971). Caucasian babies in this study started to cry more easily throughout the exam and were more difficult to console than Chinese newborns who showed strong self-quieting tendencies both with and without intervention. In contrast to the less perturbable Chinese infants, Caucasian newborns

fluctuated more frequently between states of contentment and distress. On other exam items Chinese babies demonstrated a similar accomodation to environmental "intrusions." They habituated more rapidly to a pen light shown in the infant's eyes and typically showed less defensive movement (e.g., arm-batting and squirming) when an experimenter placed a cloth over the infant's nose.

Kuchner (1980) replicated these findings and then followed a group of Chinese- and European-American mother-infant dyads through the first five months with naturalistic observations in the home. A major difference she found in infant behavior was the Caucasian babies' greater propensity for active play (e.g., mouthing at earlier ages and later, manipulation of objects). She describes group contrasts in mother behavior as follows:

> Although no difference was found in the amount of time Chinese-American and European-American mothers spent with their awake babies, the European-American mothers spent more of this time during the first three months in directly relating to her baby: caressing him..., playing physically with him, such as bouncing the baby or clapping his hands together..., allowing him to support his own weight when held..., talking to him... and maintaining longer periods of eye contact with him. (p. 36).

Kuchner also found that Chinese mothers allow their infants to cry for longer periods before intervening which helps account for the greater amount of crying exhibited by Chinese infants in this study: however, Chinese babies showed rapid cessation of crying as a response to the mother's voice just as Chinese newborns were found to quiet quickly with minimal intervention.

Based on these data from the newborn and early infancy periods what inferences can be made about the origins and nature of social and self-regulatory experience in these groups? Freedman (1974) has postulated a gene-pool hypothesis to account for group differences in newborn

temperament: relatively homogeneous populations are distinguished by unique gene-pools which contribute to group variation in average temperament. An important discovery supporting this hypothesis is the striking similarity in newborn behavioral styles across Chinese, Japanese, and Navajo populations whose migratory histories (and anatomical features) suggest genetic linkage (Freedman 1974; Callaghan 1981).

Kuchner's comparisons of Chinese and Caucasian mother-infant dyads indicate that mothers in bioculturally distinct groups tend to nurture (group typical) behavioral styles present at birth. Although Caudill and Weinstein never accepted a biosocial view of cultural differences, their data on Caucasian-Japanese comparisons of mother-infant interaction support a similar interpretation in light of Japanese newborn data. Many of the group contrasts they describe directly parallel those discovered by Kuchner. Summarizing their findings they state:

> The Japanese baby seems passive, and he lies quietly with occasional unhappy vocalizations, while his mother, in her care, does more lulling, carrying, and rocking of her baby. She seems to soothe and quiet the child... the American infant is more active, happily vocal, and exploring of his environment, and his mother in her care does more looking at and chatting to her baby. She seems to stimulate the baby to activity and to vocal response. (Caudill and Weinstein 1969, p. 31).

Similar contrasts were found in two other studies which compare Caucasian and Navajo styles of mother-infant face-to-face interaction (Fajardo and Freedman 1981; Callaghan 1981).

MATERNAL PERCEPTION OF INFANT TEMPERAMENT

In contrast to behavioral assessments that characterize Chinese babies as relatively more passive and self-regulated, Chinese mothers rate their infants as more intense and negative in mood in group comparisons on the

Carey Infant Temperament Questionnaire (Weissbluth 1982; Hsu et al 1981). This discrepancy suggests that during infancy mothers in each group bring different standards to bear on assessments of infant disposition. Since the questionnaire used in these studies taps the mother's judgement of the baby's behavior in very concrete situations, it seems likely that Chinese and Caucasian mothers have different subjective responses to the strength and import of infant expressions in the course of everyday interactions. The findings (in view of behavioral comparisons) indicate that Chinese mothers 'exaggerate" the intensity and negativism of the baby's behavioral style. Put another way, the Chinese mothers may be more sensitive to strong affective expression.

Taken together, the studies of newborn temperament and mother-infant interaction describe group variations of the mother-offspring system. We regard this system as the organization of dyadic behavior shaped by both partners in a history of shared experience (cf. Dunn 1977; Schaffer 1977). The newborn data told us that the "average" Chinese baby and the "average" Caucasian baby bring different behavioral styles to their earliest social episodes with the mother: Caucasian babies are relatively more labile in their state changes and more intense in their motor and affective responses. Analyses of mother-infant interactions showed differences in the degree to which mothers in each group actively stimulate their babies: Asian mothers are comparatively less active in trying to elicit responses and in responding contingently to infant behavior. For each group the mother-infant system is characterized by a unique fit between infant temperament and caretaking styles. That is, mothers appear to mirror and support infant propensities distinguishing these groups

from birth onwards.

These contrasts led us to speculate about the nature of group typical infant experience and its developmental implications for the mother-child system. Along with other investigators we believe that salient, contingent responsiveness to the baby's social cues and expressions of state helps "teach" the infant that he can effectively change and structure his environment as an active, self-willed agent (e.g., Schaffer 1977; Brazelton 1977). In Caucasian dyads infants appear to both elicit and receive more contingent stimulation from the mother. (Again, the reader will note our emphasis on both partners' contribution to experience in the mother-offspring system). Therefore, we might expect Caucasian infants to have more opportunities to experience control over their environment and to acquire a strong sense of self-efficacy. By contrast, the subdued interaction styles of Asian dyads appear to shape infant experience characterized by relatively passive engagement with the social and object world: the experiential "ingredients" for the acquisition of highly self-assertive propensities are less apparent in this group.

The theme of these group contrasts documented in infancy prompted interest in toddlers' autonomous functioning during interactions with the mother. From the start, our prediction was that Caucasian toddlers would exhibit more autonomy because their history of interactions (inferred from the infancy research) most likely provided experience which fostered strong self-assertion: by extension, we expected Caucasian mothers to afford their toddlers greater opportunity for self-directed behavior, reflecting an accomodation to the child's assertive disposition.

In general, our behavioral measures distinguish between self- and

mother-directed activity as a means of tapping levels of autonomy. As the reader will discover, our measures are quite molar and reflect features of both partners' behavior. This approach was consonant with our view of the mother-child system and our goal of deriving general descriptions of child experience within this system at age two. Moreover, this approach precludes unidirectional causal explanations that attribute child activity to an aspect of maternal behavior (or the opposite case). In place of such explanations we will consider our descriptive comparisons in the context of past work in order to make some tentative inferences about how the mother-child system is shaped over time in these groups.

As a further extension of previous work with these populations we investigated group differences in maternal perception of child temperament. Our temperament scale is the "toddler" version of the questionnaire used in studies with mothers of infants. In past work assessments of behavior and maternal perception of child temperament were made in separate studies. By combining these two types of assessment in the present study we were able to explore across- and within-group relationships between behavioral features of the mother-child system and the mother's subjective view of the toddler's disposition. These analyses and past findings will be used to generate hypotheses about the origins and function of culture-specific standards that mothers bring to evaluations of child temperament.

METHODS

Subjects were 16 mother-toddler dyads with 5 girls and 3 boys in each group matched on sex, age (range 25-31 months, $\bar{x}$ = 28 months), and birth order (later born except for one boy and one girl in each group).

Caucasian mothers were native born Americans of European background with high school educations: their husbands worked in non-professional occupations. Chinese mothers were of Cantonese background with an average of 7 years residence in the U.S. and 10 years of schooling. None of the Chinese mothers were fluent in English and all spoke Cantonese in the home. All but one of the Chinese families lived in Chicago's Chinatown where most of the husbands were employed as waiters or cooks. Two of the Chinese toddlers and one of the Caucasian toddlers lived in extended family households; it was common, however, for Chinese families to have relatives residing in the same apartment building or one nearby. There were more working mothers in the Chinese sample: 5 employed full-time vs. 1 full-time and 1 part-time employed Caucasian mother. None of the toddlers attended preschool.

Procedures.

A teaching-learning task and a free-play session were videotaped in the subjects' home. In the task session mothers were presented with a shape-sorter turtle and asked to teach the toddler how to fit the shapes into the shell and to encourage the child to complete the task as many times as possible in ten minutes. An array of small toys (e.g., spoons, bowls, "Fisher" dolls, a train, blocks) was provided for a ten minute play period; mothers were simply asked to play with the toddler. These assessment situations were chosen because they are enjoyable for both partners, accomplished with simple instructions, and similar to situations that might occur in the course of everyday activities. They also permitted assessment across two quite different social arenas, one with a clearly

stated goal and the other with no explicit emphasis on "performance" behavior. A female Cantonese-speaking interpreter who accompanied the observer on visits to the Chinese families gave the mothers instructions in Cantonese. A female Caucasian "assistant" was present for most visits to the European-American homes. During videotaping, these assistants usually looked after siblings so that the mother was not distracted during the task and play sessions with the toddler.

The Toddler Temperament Scale (Fullard et al. 1978) was translated into (written) Chinese by a professional bilingual teacher experienced in translating the Infant Temperament Questionnaire (Carey and McDevitt 1977). Both scales are designed to tap the mother's perception of behavioral style across nine categories originally defined in the work of Thomas and Chess (1977). These categories are: activity level, rhythmicity (e.g., regularity of sleep, hunger, etc.), approach or withdrawal to new situations, adaptability, threshold of responsiveness, intensity of reaction, quality of mood, distractability, and persistence. For each category there are items which ask the mother to rate a behavioral response as "almost never" to "almost always" likely to occur in a situation described in the question. For example, an activity item states, "The child runs ahead when walking with the parent." Responses to these items are on a 6 point scale. At the end of the scale the mother makes global ratings of such traits as mood and intensity: the mother is also asked if she feels her child is "easier," "about average," or "more difficult" compared to other toddlers. Temperament questionnaires were completed by mothers after the home visit and later returned by mail. All scales were returned, but one Chinese mother failed to use the proper scoring

procedure in Part I and her questionnaire was omitted from analyses of item responses; her global ratings were retained.

Coding and Analyses

Turtle Task

At present, our analyses of the "turtle task" are limited to non-verbal behavior. The chief unit of analysis is a trial defined as the interval between a partner picking up a block and fitting the same block into a shape. Our coding began with the recording of all maternal non-verbal behavior that prompted the child to begin a trial, helped the child fit a shape, or demonstrated the task. These behaviors, which we will call maternal controls, included pointing to a block or shape, offering a block, turning the turtle to make a shape more accessible, physically guiding the child's hand to a shape, and partially or completely performing a trial.

Next, we coded onset (picks block) and completion (fits block) of each trial and determined whether the child made an initial attempt to independently fit the shape. This attempt was defined as looking for a shape in the shell after picking up a block or holding a block over a shape: if the child made no such attempt before the mother issued a control, the trial was coded as "immediate control." In this way, we distinguished between trials in which the mother issued immediate controls (i.e., before the child made an attempt) and those in which the child tried to fit a shape before the mother intervened. We also identified "independent" trials as those accomplished with no maternal intervention from start to completion.

For a general assessment of attentional direction during the task, we coded the following child behaviors: 1) looking at the mother, 2) looking up or away from the task, and 3) bidding to the mother by holding a block out to her.

The chief measures we derived from these procedures are:

1) Overall rate (per minute) of maternal nonverbal control behavior: to determine this rate the unit of behavior was an individual control (e.g., pointing, demonstrating).

2) Percent of immediate control trials out of total trials: this is the percent of trials in which the mother issued a control before the child made an attempt to fit a block.

3) Percent of independent trials: this is the percent of trials in which the mother issued no control.

4) Percent of trials in which child attention was not entirely focused on task performance: three separate measures were obtained for the percent of trials in which the child looked at the mother, looked up or away from the task, or bidded to the mother.

Play Session

The videotaped play sessions of the Chinese dyads were translated onto a taperecorder by interpreting verbalizations and describing concommitant nonverbal behavior. This record was used for the coding of the play session activity into three modes: self-directed play, mother-directed play, and passive-watching. These modes are mutually exclusive and, according to our coding scheme, account for 100% of child activity in the play session. While analyzing the play session, the coder (who does not speak Cantonese) relied on the taped translations played along with the videotape to "match" actions with verbal behavior as needed to determine each mode.

Mother-directed play (MDP) is activity that is explicitly suggested (or commanded) by the mother either verbally or by demonstration. For example, the mother suggests, "let's cook something for the baby," while handing the toddler a spoon. If and when the toddler responds by stirring in the bowl, he is engaged in MDP: his response marks the onset of this mode if he is not already in it.

Self-directed play (SDP) is activity that the mother has not suggested verbally or by demonstration although she may support such play by placing objects near the child. When shifting from another mode, the onset of SDP is marked by active manipulation or the performance of an action with an object when this is not a response to maternal suggestion. An example of this shift is the following sequence. The mother has suggested that the toddler build a tower with the blocks. Both partners build with the blocks (MDP) until the child picks up the train and pulls two cars apart; this is a shift from MDP to SDP. If the mother then puts a doll in the train car that the child has placed on the floor and the child performs the same action with another doll, we have a shift from SDP to MDP.

The third mode is passive watching (PW) coded when the child attends visually to the mother's activity (arranging toys, demonstrating an action) without actively participating or playing independently. PW intervals of less than 10 seconds were not coded although they appeared as "pauses" during SDP and MDP intervals. During coding a stopwatch was used to time such pauses; when they exceeded 9 seconds they were recorded as PW with onset marked from the beginning of visual attention to mother activity. Offset was signaled by a shift to SDP or MDP.

For all modes the intervals between onset and offset were timed in

seconds with a stopwatch. This yielded measures of 1) interval lengths for each mode, and 2) the percent of time the child spent in SDP, MDP, and PW during the play session.

It should be emphasized that our measures reflect features of both partners' behavior, although for ease of description we refer to maternal control and child activity. For example, in the play session a shift from MDP to SDP might be influenced by the salience of the mother's structuring of activity prior to the shift and the child's level of interest in the mother-suggested activity. Similarly, the maintenance of SDP might depend on the child's inclination to pursue the new activity in the absence of an alternative one suggested by the mother or in resistance to the mother's attempt to redirect the child's play. Although our measures do not allow us to specify such proximal determinants of each shift and period of activity, they require that we regard patterns of activity as features of the mother-child system.

The same point applies to our turtle-task measures. In the task session we observed that the most salient features of autonomous child activity were independent efforts to initially try to fit a block and completions of trials without help from the mother. This observation led us to derive our child activity measures from maternal control measures since the mother's "assistance" limited self-directed task performance in a practical way. However, maternal control behavior should not be viewed as an independent determinant of autonomous activity in the task session. We can regard maternal control as a parental frame providing greater or lesser <u>opportunity</u> for autonomous task performance: the quality of child activity during interactions depends, in part, on the child's self-starting

behavior or passivity within this frame.

Reliability

For behaviors coded in the turtle task, intra-coder reliability (the only type assessed) was 95% on a randomly chosen subset of tapes with three months between initial and reliability coding. Intra-coder reliability for the play session was deemed untrustworthy due to the coder's degree of familiarity with the play session videotapes. During the formulation of "mode" definitions there were two months of sessions in which behaviors were catalogued and sessions coded in preliminary fashion. Once formal categories were fully defined all tapes were recorded according to refined rules for determining the onset of a mode. This process resulted in considerable attention to behaviors signalling shifts from one mode to another: in attempts to perform reliability checks the coder found herself anticipating (i.e., recalling) more previously coded shifts before they appeared, thus inflating the match between original and reliability coding.

(Unless otherwise noted, group differences on measures were tested with one-tailed Mann-Whitney U Tests: significance levels were set at .10 in order to detect trends in the data. For assessing generalizability of behavior across situations we used Spearman Rank Correlation Coefficientts to test associations between measures in the task and play session. This test was also used to explore relationships between temperament ratings and behavioral measures.)

FINDINGS

Play Session

Compared to the Chinese toddlers, Caucasian children spent more time in SPD (p.=.03) and less time in PW (p.=.01) during the play session. All Chinese toddlers and only 4 of the 8 Caucasian toddlers had at least one period of PW. There was no group difference in amount of MDP. Table I shows group means for percent of time spent in SDP, MDP, and PW during the play session.

A similar pattern emerges when we compare groups on the longest intervals of each mode that occurred in the play session. The measures for this comparison were the durations (in seconds) of the longest periods of sustained SDP, MDP, and PW. (See Table I for group means of these intervals.) There was no group difference for longest intervals of MDP. Durations were greater for Caucasian toddlers' longest periods of SDP (p.=.097) and for Chinese toddlers' longest periods of PW (Fisher Test p.=.05, Caucasian N=4). We also compared durations of the longest period spent in non-self-directed play defined as either MDP alone or, when present, MDP and an adjacent period of PW. This duration was longer for Chinese toddlers (p.=.019). Groups did not differ in comparisons of shortest intervals for each mode: toddlers in both groups were similar in having at least one very brief period of each mode.

TABLE I

Group Means for % Time in SDP, MDP, and PW and Longest Interval Durations

	SDP	MDP	PW
Chinese	36% -- 64 seconds	47% -- 79 seconds	17% -- 38 seconds
Caucasian	56% -- 93 seconds	40% -- 70 seconds	4% -- 18 seconds

In sum, these findings indicate that the amount of self-directed activity in the Chinese group is lessened not by a significantly greater amount of time in mother-directed activity, but by more time spent passively watching mother activity. Caucasian toddlers spent more time in SDP, sustained SDP for a relatively long time at least once during the play session, and spent less time in PW. There was no group difference for two measures of MDP: percent of time spent in MDP and duration of longest period of MDP.

Turtle-Task Session

Groups did not differ significantly in the number of trials completed during the task session. The frequency of different types of maternal controls (e.g., pointing versus demonstrating) did not distinguish the groups, but the overall rate per minute of maternal controls was higher for Chinese mothers ($p.=.08$). There was no group difference in the percent of immediate control trials (i.e., trials in which the mother issued a control before the toddler made an initial attempt to fit a block) when we included all trials in the task session. Because this finding was counter to our impression that Chinese mothers issue more immediate controls, especially in the sessions' early trials, we investigated group differences for the

first half of the session. For each dyad we divided the total number of trials by 2 and obtained percents of immediate control trials for the first and second group of trials. In this comparison, we found that Chinese mothers issued a greater percent of immediate controls during the first half of the session ($p.=.025$); there was no group difference on this measure for the second (i.e., later) group of trials. (This was the only analysis for which sessions were split into two parts.) In addition to lower rates of maternal control and percent of immediate controls during earlier trials, Caucasian dyads had a greater percent of independent trials in which the child fit the block with no assistance from the mother ($p.=.097$). Table II shows group means for these measures.

The percent of trials in which child attention was not entirely focused on task performance was assessed: no group differences were found for our three measures of child attention (i.e., looking up or away from the task, looking at the mother, and bidding to the mother). For the most part, toddlers in both groups were highly attentive to the task. On the average, bidding to the mother by holding out a block occurred in only 4% of the trials, looking at the mother in 12% of the trials, and looking up or away from the task in 18% of the trials. Most of these behaviors appeared very brief in duration. Only one toddler, a Caucasian girl, failed to complete the full session. After six minutes this child walked away from the task to investigate the observer's video camera and strongly resisted the mother's attempts to engage her again in the task; prior to this new interest this toddler was highly attentive to the task and issued no bids to the mother.

TABLE II

Group Means for Turtle-Task Measures

	Control Rate	%Trials with Immediate Controls*	%Independent Trials
Chinese	5,9 per minute	50%	36%
Caucasian	3,5 per minute	20%	54%

*First half of session

To sum up, we found that the rate of maternal control behavior was higher in Chinese dyads and the percent of independent trials was greater in the Caucasian group. In addition, there was a higher percent of immediate control trials for the first half (i.e., early part) of the session in the Chinese dyads. Taken together, our behavioral measures for the play and task sessions showed predicted group differences in levels of autonomous child activity: Caucasian toddlers engaged in more independent, self-directed play and task performance.

Behavioral Consistency

The three measures distinguishing groups in the turtle task (rate of maternal control, % of immediate control trials in first half, and % non-independent trials) were significantly related (for the Chinese group, W=.90, p.=.01; for the Caucasian group, W=.86, p.=.02). Spearman rank correlations were used to explore behavioral consistencies in independent vs. non-independent activity across the task and play sessions. For a global measure reflecting the child's relative degree of independent activity in the turtle task we used the average rank of the dyad on the three task

measures that were significantly related. These average rankings for the turtle task were then correlated with toddlers' ranks on percent of self-directed activity (SDP) in the play session. Correlations between these measures were nonsignificant for both groups. Another test of behavioral consistency across situations was made by replacing the global turtle-task measure with the single measure of percent of independent trials in the turtle task. This measure was chosen for a second test because it reflects behavior over the entire session (unlike % of immediate controls in the first half) and it provides direct information about the child's independent completion of trials (unlike maternal control rate). The correlation between ranks on % of independent trials in the turtle task and ranks on % SDP in the play session was nonsignificant for the Caucasian group (r=.51): this correlation showed a strong trend in the Chinese group (r=.634, just missing the critical value --.643-- significant at .05).

The significant associations among the turtle-task measures indicate that mothers who issue more controls also tend to issue them more often before the child makes an attempt at the start of the trial, and to use controls in a greater number of trials; independent child activity is limited in a practical way by all of these behaviors. No evidence of strong consistency in independent activity across assessment situations was found when self-directed play was correlated with the global measure of activity in the task session. In the Chinese group there appears to be some degree of consistency across situations when we consider only the measure of independent task trials and its relationship to self-directed play: this trend is absent in the Caucasian group.

The Toddler Temperament Questionnaire

Comparisons of scores for the nine categories of behavioral style assessed by the Toddler Temperament Scale (Chinese N=7) showed only one group contrast: Chinese mothers rated their toddlers as less adaptable ($p.=.04$). The nine questions designed to assess adaptability on the Temperament Scale are listed in Figure I. Their content, with the exception of #s 44, 88, and 93, emphasize a compliant-resistant dimension of behavior as a response to parental discipline, denial, or physical control. In light of this content, Chinese mothers appear to view their toddlers as relatively less compliant in the context of everyday situations demanding cooperation from the child.

The distribution of ratings on general questions about global dimensions of child disposition are shown in Table III. These ratings, including the adaptability item, appear similar across groups with the exception of the most general "temperament" rating. On this item most Caucasian mothers rated the child as "average." Five Chinese mothers rated the child as "easier than average," while no Caucasian mother used this assessment. Only one mother in each group rated the toddler as "more difficult than average" (both girls).

FIGURE I

Adaptability Items

11. The child accepts delays (for several minutes) for desired objects or activities (snacks, treats, gifts).

32. The child allows face washing without protest (squirming, turning away).

44. The child takes several days to get used to (show usual behavior in) new situations away from parent (play group, day care center, sitter).

56. The child accepts being dressed and undressed without protest.

60. The child can be coaxed out of a forbidden activity.

65. The child will avoid repetition of misbehavior if punished firmly once or twice.

78. The child continues to get into forbidden areas or objects in spite of parents' repeated warnings.

88. The child is still wary of strangers after 15 minutes.

93. The child sleeps poorly (restless, wakeful) in new places for first 2 or 3 times.

We explored relationships between behavioral measures (average rank on turtle-task measures and %SDP) and six temperament ratings (based on item responses): activity, approach, adaptability, intensity, mood, and persistence. No significant associations were found between measures of independent activity and temperament scores.

Two relationships approaching (.05) significance in the Caucasian group were associations between turtle-task measures (average rank) and the temperament score for activity level (r=.61) and persistence (r=.60). Caucasian toddlers whose mothers were less controlling (i.e., afforded them more opportunity for independent task performance) were rated by their mothers as highly active and non-persistent.

The highest correlation in the Chinese group (N=7) was also the relationship between independent activity in the turtle task and the mother's assessment of child activity level (r=.61). The next highest correlation in the Chinese sample was the relationship between the mother's rating of child adaptability and level of independent activity in the turtle task (r=.57). This relationship, while only a slight trend with N=7, is notable since it is a case of a <u>within</u>-group association running

counter to a between-group relationship: in group comparisons Chinese mothers were found to be more controlling in the turtle task and to rate their toddlers as relatively non-adaptable.

TABLE III

Mothers' General Ratings of Toddler Temperament Across Groups

		Number of Subjects for each Rating	
		Chinese	Caucasian
ACTIVITY LEVEL	high	4	4
	medium	3	4
	low	0	0
	no response (NR)	1	0
REGULARITY	fairly regular	4	7
	variable	0	0
	fairly irregular	3	1
	NR	1	0
ADAPTABILITY	generally adaptable	7	8
	variable	0	0
	slow to adapt	0	0
	NR	1	0
RESPONSE TO NEW SITUATIONS	approach	5	5
	variable	1	3
	withdrawal	1	0
	NR	1	0
LEVEL OF SENSORY THRESHOLD	high	0	1
	medium	5	3
	low	3	4
INTENSITY OF RESPONSE	intense	3	3
	variable	3	5
	mild	2	0
MOOD	generally posotive	4	6
	variable	3	2
	generally negative	1	0
DISTRACTABILITY	easily distractable	4	3
	variable	3	5
	non-distractable	1	0
PERSISTENCE AND ATTENTION SPAN	persistant	3	2
	variable	3	5
	non-persistant	2	0
	NR	0	1
TEMPERAMENT	(i.e., "in general, temperament of child is:)		
	average	2	7
	more difficult than average	1	1
	easier than average	5	0

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DISCUSSION

Here we will use our findings and more general impressions of the interactions to outline comparative descriptions of toddler experience in each group and to consider distinguishing features of the mother-child system of Caucasian and Chinese dyads during the toddler period. In addition, we will sketch a comparative longitudinal view of the mother-offspring system by examining our comparisons in the context of the infancy work reviewed earlier.

Across two ostensibly different social situations groups were distinguished by the degree of autonomy children exhibited in task performance and play activity. In the turtle-task session autonomy was gauged by the frequency, timing, and distribution of maternal behavior that infringed on independent task performance. It was clear that in a practical sense the greater control issued by the Chinese mothers limited child autonomy and the more laissez-faire approach of the Caucasian mothers gave the child more opportunities to make independent attempts at the task and to complete more trials on his own. However, we cannot say that differential maternal control independently determined levels of autonomous functioning in the task session. The child must accept maternal control in order for this behavior to limit his independent activity just as he must perform with self-initiative when the mother offers no help.

Because we found no evidence in the Chinese group of child resistance to maternal intervention we derive the broader picture of a mother-child system in which mothers frequently impose and toddlers readily accept greater limitations on self-directed behavior. Two findings suggest that

Caucasian toddlers took full advantage of the greater opportunity for self-directed task performance afforded them by their mothers. First, with considerably less help from the mother they completed about the same number of trials, on average, as the Chinese toddlers. Secondly, like the Chinese toddlers, they showed high levels of attention to task activity (e.g., infrequent bidding to the mother and looking away from the task). In the Caucasian dyads, mothers provide more rein for self-directed activity and toddlers exercise self-starting behavior within this frame.

In the play session Chinese toddlers spent more time in passive watching and less time in self-directed activity. As noted before, we feel that the amount of time children spent in each mode was dependent upon a number of interrelated factors relevant to both partners' activity, attention, and interest (e.g., the mother's tendency to structure activity in a highly salient manner and the child's inclination to attend to or ignore such influence). More general impressions of the play sessions provide clues about how maternal control and child assertion shaped activity during the play interactions in each group.

One behavior noted only in the Chinese dyads' play suggests that the Chinese mothers' structuring of mother-directed play sometimes discourages child participation and hence, may invite periods of passive watching. This behavior is an "undoing" of some child action. For example, the mother and child are building together, alternately placing blocks when the mother removes a block the child has arranged and places it somewhere else, sometimes commenting that "this belongs here." Another instance is the following sequence: The mother has suggested cooking as an activity and the toddler stirs with the spoon and bowl the mother has handed him.

Soon after the toddler begins to "cook," the mother moves the train in front of the child, explaining that it can be pulled apart (which the mother does) and used to carry dolls. In these cases, and similar ones, the mother interrupts the child's engagement in a mother-directed activity (to "correct" the child or introduce a new play theme); if the child then stops his activity to attend to the mother as the Chinese toddlers tended to do, we can see how both partners contribute to a period of passive watching. In the turtle-task session we observed that Chinese mothers were more controlling and toddlers were highly acquiescent to maternal intervention. One form of child acquiescence in the play session appeared to be shifting full attention to the mother when she intervened to structure play activity. In this regard, it is interesting to note that there was no significant group difference in amounts of mother-directed play, but only in amounts of passive watching and self-directed activity. Diminished autonomy in the Chinese group appeared in the play interactions as periods of complete inactivity.

As a group, Caucasian toddlers spent more time in self-directed activity and less time in passive watching. Some of the Caucasian play interactions left striking impressions about how autonomous experience was shaped by maternal control behavior and toddlers' responses to maternal structuring of play activity. There was repeated resistance to the mother's suggestions and commands in two play sessions, both with female toddlers. In one session a Caucasian toddler roamed about the room, putting toys in drawers and saying "No way!" to her mother's repeated requests to play on the floor near the mother; at one point the mother seated the toddler on her lap, but quickly released her when the child

started to fuss. At the start of another play session the mother repeatedly tried to engage the toddler in a cooperative activity, building a tower. This toddler simply ignored the mother's invitation to build ("C'mon, why don't you build too?"), but every time the mother had completed building a tower, the toddler briefly looked away from her own activity and knocked the tower over. In these examples, toddlers seemed to spend much time in self-directed activity because they resisted maternal controls. In other cases, mothers spent most of the session commenting on and elaborating self-directed child activity so that there were fewer occasions for possible resistance. Dyadic behavior in these interactions seemed similar to the pattern we observed in the task session: mothers provided opportunities for self-directed activity and toddlers "chose" their own play themes in the absence of maternal structuring.

Although we found group differences in both the task and play sessions there was no evidence of behavioral consistency for the Caucasian group indicating that the autonomous activity of individual Caucasian toddlers was highly variable across assessment situations. We found greater consistency in the Chinese group and suspect that this resulted from interactions that were highly mother-directed. If the Chinese mother imposes a stronger agenda during interactions, the influence of situationally variable child behavior might be minimized. This factor coupled with the ready acquiescence to maternal control shown by Chinese toddlers might lead to greater cross-situational consistency than was evident in the Caucasian group where toddlers seemed to lead the way and to vary more in their responses to each situation.

To sum up, our behavioral analyses yielded descriptive comparisons of

toddlers' autonomous functioning during interactions with the mother. We have emphasized that our activity measures reflect features of both partners' behavior and serve as broad indices of the mother-child system. In general, our findings suggest that during toddlerhood this system affords Caucasian toddlers considerably more experience as self-assertive agents who actively and independently structure the environment within a parental frame that gives the child considerable freedom for self-directed activity and initiative. (We should note that even in the cases where we found child resistance to maternal controls, the mothers did not insist on compliance by exerting stronger modes of control.) The Chinese toddlers' experience during interactions can be described as comparatively passive: these children accepted relatively strong maternal controls that limited opportunities for independent task performance and that seemed to invite periods of inactivity (i.e., passive attention to the mother) during play sessions.

Our finding that Chinese toddlers were highly acquiescent to strong parental controls is interesting to consider in view of the group difference in adaptability scores on the Temperament Scale. A content analysis showed that most adaptability items tapped the mother's perceptions of child compliance propensities in everyday situations. Chinese mothers seem to perceive their toddlers as relatively non-compliant. This finding, in the context of our behavioral assessments, suggests a group difference in mothers' subjective standards for judging self-willed behavior (or "misbehavior"). These hypothesized standards are concordant with--and may contribute to--different population norms for parental control behavior: Chinese mothers appear to have a greater sensitivity to resistant behavior

(i.e., harsher standards) and their interaction styles impose considerable limitations on child autonomy. Similarly, we can infer more "liberal" standards in the Caucasian group and concordance between greater maternal tolerance for self-willed behavior and interaction styles that permit and probably foster child assertiveness.

Given an across-group relationship between adaptability ratings and measures of maternal control, we might expect that within the Chinese group there would be an association between the mother's judgement of her toddler as "nonadaptable" and relatively strong maternal control. Though not significant, the opposite relationship was present as the second largest correlation between Chinese toddler temperament scores and behavioral measures. Oppositions between within- and across-group relationships are commonly found in cross-cultural research and a number of explanations have been proposed to account for them (Shweder 1973; Minturn and Lambert 1964). These include the greater impact of measurement error in within-group analyses and the complexity of variables exerting influence at the level of the individual that escapes our notice in group comparisons employing a minimum number of measures.

In the present case it is interesting to note that the strongest correlation between temperament assessments and behavior found in both groups was the association between high ratings of child activity and a high level of independent activity (and low maternal control) in the turtle task. One factor in this association might be mothers' reluctance to impose control on a child perceived as highly active because she does not expect such a toddler to accept limits on his activity: the mother may limit her controls in order to minimize conflict if she "predicts" that

intervention will meet with resistance. This speculation can be extended to the case of a Chinese mother who perceives her toddler as noncompliant and who affords the child greater autonomy (e.g., issues fewer controls) in an effort to minimize opportunities for conflict. These speculations suggest the possibility of a regulatory mechanism common to both groups--i.e., the influence of the mother's perception of child compliance propensities on her willingness to issue controls. The present data do not permit a reconciliation of differing within- and across-group relationships between maternal perception of toddler compliance and control behavior. However, the discrepancy raises the important question of how to interpret patterns of within-group variation in the contexts of different population norms.

Unlike past group comparisons of maternal perception of infant temperament we found no significant contrasts in ratings of child mood or intensity. The types of group contrasts found across age periods may depend on the salience of different developmental issues in socialization. Chinese mothers' subjective response to the child's affective expression might be expressed more strongly in the adaptability ratings at age two when child compliance is a major issue. It is intriguing to speculate that group temperament propensities contribute to subjective standards for judging child behavior in everyday situations. One possibility is that Asian mothers are more sensitive to occasional expressions of strong or negative affect because such behavior is less typical in the population. This sensitivity might generalize to assessments of infant and toddler temperament and "exaggerate" ratings of negative mood, intensity, and protest in situations demanding compliance.

Despite Chinese mothers' tendency to assess their toddlers as less adaptable, most of them gave the toddler a global rating of "easier than average," an assessment made by none of the Caucasian mothers who tended to rate the toddler as "average." Past work with parent questionnaires (Bates 1980) has documented discrepancies between global ratings of child disposition and responses to well-defined, everyday situations. Apparently, a parent's general assessment of child temperament is comprised of more than an aggregate assessment of response tendencies in specific situations. The apparent discrepancy in this study remains a puzzle. One hypothesis is that Chinese mothers perceive their toddlers as relatively non-compliant in everyday situations, but a low incidence of sustained parent-toddler conflict in such situations contributes to a global assessment of "easier than average." In other words, the global assessment may, in part, reflect the ease with which Chinese mothers can modify child willfullness. Chinese toddlers' ready acceptance of strong maternal controls, observed in our behavioral assessments, suggest that mother-toddler conflict is unlikely to escalate into prolonged "battles of will" in Chinese dyads.

As an extension of the infancy research reviewed earlier our comparisons at age two provide a longitudinal perspective of the mother-offspring system in bioculturally distinct groups. Taken together, the assessments during infancy and toddlerhood suggest an intriguing pattern of continuity in child experience and transformation in mothering styles unique to each group. Caucasian mothers were shown in past work to spend more time actively eliciting responses from their babies by structuring lively verbal and social episodes. Yet the Caucasian mother's style with her toddler is relatively passive in comparison to Chinese mothers who more actively

intervene to encourage child performance (albeit with assistance) in the task session. The subdued style of maternal behavior documented in mother-infant interactions with Chinese dyads is replaced in our assessments with a highly active, engaged style characterized here as "controlling."

It seems to us that different maternal styles in infancy and toddlerhood reflect the mother's accomodation to changing capacities of the child and result in continuity of child experience unique to each group. Caucasian and Chinese mothers probably share a perception of emergent autonomy in the two-year old whose language and motor capacities give him a range of new skills for independent action. Given his history of experience in infancy, the Caucasian toddler is highly assertive and the mother's provision of opportunities for self-directed activity seems especially suitable for the maintenance of earlier propensities and experience shaped in the mother-child system. Similarly the Chinese mother's more controlling style in toddlerhood may best maintain social and self-regulatory experience (e.g., relative passivity) extending from infancy.

Beyond the suitability of maternal styles for fostering continuity of child experience, there may be group differences in children's tolerance of control that helps regulate maternal behavior. There is some evidence in the present study that Caucasian toddlers have a lower threshold for responding to maternal "intrusions" on self-directed activity. Since there were no instances of conflict in the Chinese dyads, it is clear that Chinese toddlers readily accept relatively strong maternal control. Several instances of mild resistance were common in the Caucasian dyads. These included moving the hand away when the mother tried to direct it to the proper shape and moving the turtle to one side, away from the mother's reach.

We have already mentioned the cases of child resistance in the play session, both with Caucasian girls. The task session of one of these girls was terminated early when she left the task to inspect the video camera: a full blown temper tantrum erupted when her mother tried to bring her back to the task.

Our developmental sketch suggests that the mother-offspring system in these bioculturally unique groups fosters broadly different propensities in the two year old and that these, in turn, help shape parental frames for autonomy during toddlerhood. We have attempted here to illustrate an approach to conceptualizing cultural influence on socialization and development that highlights emergent experience and the processes by which social contexts created by the mother and child in one period influence subsequent arenas for development. This approach emphasizes the self-generating nature of biocultural processes in the mother-offspring system. And hopefully, it underlines the inadequacy of relying on socialization phenomena observed at a single age to generalize about means of "cultural transmission." In the context of past work our findings indicate that certain broadly defined features of child experience distinguishing groups are maintained over time, but in support of this continuity the repertoire. and style of the socializer change to accomodate new capacities of the child. "Cultural transmission" takes varied forms throughout the course of development.

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